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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/648,624

08/25/2003

Robert Hoffman

ANDIP035

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EXAMINER

HAN, CLEMENCE S

ART UNIT

PAPER NUMBER

2616

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

SF

Office Action Summary

Application No.

10/648,624

Applicant(s)

HOFFMAN ET AL.

Examiner

Clemence Han

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>cont. below</u> . | 6) <input type="checkbox"/> Other: _____ |

IDS: 06/07/2004, 03/28/2005, 08/17/2006 and 03/05/2007

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to because "D" in the queue 111 in Figure 1 should be replaced with "B" (see Specification page 2 line 25-26). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the

filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 260, 325, 330, 440, 610, 753, 755, 757, 759, 769, 770, 772 and 774. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to because it is unclear whether 762 in Figure 7 is memory or CPU (see Specification page 17 line 33-34). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid

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abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 4, 7-10, 14, 17-21, 23-28, 30, 31 and 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Regarding claim 4, the phrase "a queue" in line 2 renders the claim indefinite because it is unclear whether it is the same queue as "a queue" in claim 1 line 4 or not.
8. Regarding claim 7, 17, the phrase "a Q number" in line 2 renders the claim indefinite because it is unclear what "Q number" is.
9. Regarding claim 8, the phrase "a queue" in line 3 renders the claim indefinite because it is unclear whether it is the same queue as "a queue" in claim 1 line 4 or not.
10. Regarding claim 9, the phrase "a queue" in line 2 and 4 renders the claim indefinite because it is unclear whether it is the same queue as "a queue" in claim 1 line 4 or not.
11. Regarding claim 10, the phrase "a queue" in line 4 renders the claim indefinite because it is unclear whether it is the same queue as "a queue" in claim 1 line 4 or not.
12. Regarding claim 14, the phrase "a queue" in line 2 renders the claim indefinite because it is unclear whether it is the same queue as "a queue" in claim 11 line 4 or not.
13. Regarding claim 18, the phrase "a queue" in line 4 renders the claim indefinite because it is unclear whether it is the same queue as "a queue" in claim 11 line 4 or not.
14. Regarding claim 19, the phrase "a queue" in line 2 and 4 renders the claim indefinite because it is unclear whether it is the same queue as "a queue" in claim 11 line 4 or not.
15. Regarding claim 21, the phrase "a queue" in line 2 renders the claim indefinite because it is unclear whether it is the same queue as "a queue" in claim 11 line 4 or not.

16. Regarding claim 23, the phrase "incoming packets" in line 5 renders the claim indefinite because it is unclear whether it is the same packets as "incoming packet" in line 2 or not.

17. Regarding claim 23, the phrase "a queue" in line 9 renders the claim indefinite because it is unclear whether it is the same queue as "a queue" in line 6 or not.

18. Regarding claim 26, the phrase "having no queues allocated at a first time" in line 3 renders the claim indefinite because it is unclear what it means.

19. Claim 27 and 28 recites the limitation "the step" in line 1. There is insufficient antecedent basis for this limitation in the claim.

20. Regarding claim 27, the phrase "a second queue" in line 2 renders the claim indefinite because it is unclear whether it could be the same queue as the first queue or not.

21. Claim 30 recites the limitation "the Fibre Channel protocol" in line 2. There is insufficient antecedent basis for this limitation in the claim.

22. Claim 31 recites the limitation "the physical queue" in line 6. There is insufficient antecedent basis for this limitation in the claim.

23. Claim 33 recites the limitation "the list" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

24. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

25. Claim 1-29 and 31-32 are rejected under 35 U.S.C. 102(a) as being anticipated by Morgan et al. (US Pub. 2003/0076849).

Regarding claim 1, 11, 22 and 23, Morgan teaches a method of allocating queues in a network device, the method comprising: making a classification for an incoming packet [0027]; determining whether a queue has already been allocated for the classification [0049]; and allocating the queue when the queue has not already been allocated for the classification [0011].

Regarding claim 2 and 12, Morgan teaches the queue is associated with an ingress port of the network device [0008].

Regarding claim 3 and 13, Morgan teaches the queue is a virtual output queue [0053].

Regarding claim 4 and 14, Morgan teaches detecting when a queue is empty; and de-allocating the empty queue [0043], [0053].

Regarding claim 5 and 15, Morgan teaches the queue is associated with an ingress port [0008].

Regarding claim 6 and 16, Morgan teaches the classification is based on a packet source, a packet destination or a packet priority [0062].

Regarding claim 7 and 17, Morgan teaches the classification comprises a Q number [0058].

Regarding claim 8 and 18, Morgan teaches the determining step comprises addressing a memory that indicates whether the classification has already been allocated a queue [0034].

Regarding claim 9 and 19, Morgan teaches updating a memory when a queue is de-allocated, wherein the memory indicates whether the classification has already been allocated a queue [0034].

Regarding claim 10, 20 and 21, Morgan teaches the network device further comprises a free list that indicates queues available for allocation and wherein the method further comprises updating the free list when a queue is de-allocated [0053].

Regarding claim 24, Morgan teaches the memory is a content addressable memory [0034].

Regarding claim 25, Morgan teaches the memory is a random access memory [0034].

Regarding claim 26, Morgan teaches a method of allocating queues in a network device, the method comprising: having no queues allocated at a first time [0011]; receiving a first packet [0011]; making a first classification for the first packet [0018]; allocating a first queue for the first classification [0011]; receiving a second packet [0043], [0044]; making a second classification for the second packet [0043], [0044]; and determining whether the first classification is the same as the second classification [0043], [0044].

Regarding claim 27, Morgan teaches the step of allocating a second queue when the first classification is different from the second classification [0043], [0044].

Regarding claim 28, Morgan teaches the step of assigning the second packet to the first queue when the first classification is not different from the second classification [0046].

Regarding claim 29, Morgan teaches a method of allocating queues in a network device, the method comprising: determining a first number of packets that an ingress port of the network device can receive [0040], [0041]; and allocating a second number of physical queues for the ingress port, wherein the second number is less than or equal to the first number [0044]-[0046].

Regarding claim 31, Morgan teaches identifying a category for each packet arriving at the ingress port; correlating the category to an existing physical queue; and storing packet information in the physical queue [0018].

Regarding claim 32, Morgan teaches identifying a category for each packet arriving at the ingress port; and assigning the category to a physical queue, wherein the network device allocates a new physical queue only when there is no existing physical queue for the category [0043], [0044].

Regarding claim 33, Morgan teaches the packet information comprises control information selected from the list consisting of destination information, source information, priority information, payload type information and payload size information [0062].

Claim Rejections - 35 USC § 103

26. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

27. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morgan et al. in view of Jenne et al. (US Pub. 2003/0126223).

Regarding claim 30, Morgan teaches a method of allocating queues in a network device, the method comprising: determining a first number of packets that an ingress port of the network device can receive [0040], [0041]; and allocating a second number of physical queues for the ingress port, wherein the second number is less than or equal to the first number [0044]-[0046]. Morgan, however, does not teach the network device operates according to the Fibre Channel protocol and wherein the determining step is based on a number of buffer-to-buffer credits granted by the ingress port. Jenne teaches the network device operates according to the Fibre Channel protocol [0018] and wherein the determining step is based on a number of buffer-to-buffer credits granted by the ingress port [0006]. It would have been obvious to one skilled in the art to modify Morgan to be with the network device operates according to the Fibre Channel protocol [0018] and wherein the determining step is based on a number of buffer-to-buffer credits

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granted by the ingress port as taught by Jenne in order to provide end-to-end congestion control [0003].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clemence Han whose telephone number is (571) 272-3158. The examiner can normally be reached on Monday-Friday 9 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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